Request to Archive
With The National Centers for Environmental Information
For CPC Morphing Technique (CMORPH) High Resolution Global Precipitation Estimates
Provided by NOAA/NWS/NCEP/CPC

2015-06-16

This information will be used by NCEI to conduct an appraisal and make a decision on the request.

1. Who is the primary point of contact for this request?

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2. Name the organization or group responsible for creating the dataset.

DOC/NOAA/NWS/NCEP/CPC > Climate Prediction Center, National Centers for Environmental Prediction, National Weather Service, NOAA, U.S. Department of Commerce

3. Provide an overview summarizing the scope of data you want to archive. Describe the outputs, data variables, including their measurement resolution and coverage.

The data to be archived is the bias-corrected, reprocessed CPC Morphing technique (CMORPH) high-resolution global satellite precipitation estimates. The geophysical variable included in the data set is precipitation. There will be THREE sets of data files generated for different time/space resolution for improved user experience:

3a) the full-resolution CMORPH data
Output variable: precipitation rate in mm/hour
spatial resolution: 8kmx8km
spatial coverage: global (60S-60N)
temporal resolution: 30-min
data period: January 1, 1998 to the present

3b) Hourly CMORPH
Output variable: precipitation rate in mm/hour
spatial resolution: 0.25deg lat/lon
spatial coverage: global (60S-60N)
temporal resolution: hourly
data period: January 1, 1998 to the present

3c) Daily CMORPH
Output variable: daily precipitation in mm/day

spatial resolution: 0.25deg lat/lon
spatial coverage: global (60S-60N)
temporal resolution: daily (00z-00Z)
data period: January 1, 1998 to the present

3b) and 3c) are derived from and quantitatively consistent with the CMORPH at its original resolution (3a).

4. What is the time period covered by the dataset? (YYYY-MM-DD, YYYY-MM or YYYY)
From 1998-01-01
Ongoing as continuous updates to the data record

5. Edition or version number(s) of the dataset:
Version 1.0ADJ (ADJ stands for bias adjusted)

6. Approximate date when the dataset was or will be released to the public:
2015-03-01

7. Who are the expected users of the archived data? How will the archived data be used?
Users of the CMORPH data files include:

7a) NOAA/NWS operational/service centers
e.g. NCEP/EMC, NCEP/NHC, NCEP/WPC, NCEP/CPC, OHD

7b) NOAA R&D institutions
e.g. NWS/OHD, OAR/ESRI

7c) Users of Industry
e.g. Insurance, health management, water resource management, hydraulic management, energy companies

7d) Users of science communities
e.g. NCAR, NASA/GSFC, NASA/JPL, over 50 national and international universities including MIT, Princeton, et al.

7e) Users of other federal and state government
e.g. DOD/AFWA, DOD/NRL, USAID/FEWS, USDA, NASA

7f) other users
e.g. World bank,meteorological and hydrological agencies of many foregin countries including China, Korea, Taiwan, Braziil et al.; WMO

8. Has the dataset undergone user evaluation and/or an independent review process? Did NCEI participate in design reviews?
Although there is no dedicated project (e.g. workshop) on this specific topics, there are many published work on the examination of CMORPH and intercomparison with similar products. The data center is in preparation of a journal paper describing the performance of this bias corrected, reprocessed CMORPH precipitation data set.

9. Describe the dataset's relationship to other archived datasets, such as earlier versions or related source data. If this is a new version, how does it improve upon the previous version(s)?
The CMORPH satellite precipitation estimates are derived through integrating level 2 retrievals from passive

microwave (PMW measurements aboard multiple low earth orbit (LEO) satellites. Level 2 retrievals from some of the LEO satellites are (may be) products of CDR projects.

Over ocean, the bias correction for the CMORPH is performed against the pentad GPCP merged analysis which is a CDR product.

Future versions of this products are expected to be improved taking full advantage of the accomplished and on-going CDR projects.

10. List the input datasets and ancillary information used to produce the data.

Input data sets:
10a) full-resolution (4km/30-min) global geostationary IR data of CPC;
10b) level 2 retrievals of instantaneous precipitation rate from all low earth orbit satellites over the data period;
10c) IMS daily northern hemisphere snow and ice analysis of NESDIS;
10d) CPC unified global daily gauge analysis; and
10e) GPCP merged analysis of global pentad precipitation

11. List web pages and other links that provide information on the data.

http://www.cpc.ncep.noaa.gov/products/janowiak/cmorph_description.html

12. List the kinds of documents, metadata and code that are available for archiving. For example, data format specifications, user guides, algorithm documentation, metadata compliant with a standard such as ISO 19115, source code, platform/instrument metadata, data/process flow diagrams, etc.

1. 12a) data format specification
   12b) user guides
   13c) a PPT describing how the data set is created, including description of the algorithm and flow chart of the process

13. Indicate the data file format(s).

1. netCDF-4

14. Are the data files compressed?

netCDF-4/HDF5 compression

15. Provide details on how the files are named and how they are organized (e.g., file_name_pattern_YYYYMM.tar in monthly aggregations).

15a) CMORPH at 8kmx8km - 30-min
CMORPH_V1.0_ADJ_8km-30min_yyyymmdd.nc.gz
Each daily file contains 48 global fields of 30-min precipitation rate organized in sequence, with the first one representing the first 30-min time period (00:00-00:30GMT) of the stamped date (yyyymmdd). The global data array is composed of 4948 pixels in west-east direction and 1649 lines from south to north. The size of the pixels is 0.072756669 deg in longitude by 0.072771377 deg in latitude. The data arrays runs from west to east starting at 0.036378335 deg East, and from south to north starting at 59.963614 deg South.

15b) CMORPH at 0.25deg Lat/Lon - Hourly
CMORPH_V1.0_ADJ_0.25deg-HLY_yyyymmddhh
Each hourly file contains a global field of hourly mean precipitation rate for the stamped hour. The global data array runs from west to east and south to north.

15c) CMORPH at 0.25deg Lat/Lon - Daily
Each daily file contains a global field of mean precipitation rate for the stamped date. The global data array runs from west to east and south to north.
CMORPH_V1.0_ADJ_0.25deg-DLY_00Z_yyyymmdd

16. Explain how to access sample data files and/or a file listing for previewing. If it is not available now, when will it be available?
We will pass you sample files one week from this request is granted.

17. What is the total data volume to be submitted?
Historic Data: all historic data or data submitted as a completed collection.

Total Data Volume:	300GB
Number of Data Files:	20000

Continuous Data: data volume rate for a continuous data production.

Total Data Volume Rate:	40MB per Day
Data File Frequency:	3 per Day
Data Production Start:	2015-06-01

18. Are later updates, revisions or replacement files anticipated? If so, explain the conditions for submitting these additional data to the archive.
Sometimes, input data files come in later or in error. Revision is needed to get the CMORPH in right form.

19. Describe the server that will connect to the ingest server at NCEI for submitting the data.

Physical Location:	NCEP/CPC, College Park, MD
System Name:	cpc-ls-work2
System Owner:	NOAA/NWS/NCEP/CPC
Additional Information:	

20. What are the possible methods for submitting the data to NCEI? Select all that apply.
1. FTP PUSH

21. Identify how you would like NCEI to distribute the data. Web access support depends on the resources available for the dataset.

22. Will there be any distribution, usage, or other restrictions that apply to the data in the archive?
No known constraints apply to the data.

23. Discuss the rationale for archiving the dataset and the anticipated benefits. Mention any risks associated with not archiving the dataset at NCEI.
The bias-corrected, reprocessed CMORPH provides an important homogenous data record of global precipitation at a very high time/space resolution and high quality. The data set, like its precedent raw CMORPH data, is expected to be used widely by scientists, engineers, and decision makers for applications in weather/climate/hazard monitoring, global water resource management, flood studies, agricultural planning et al. Leaving the data set un-archived will significantly compromised users capacity in taking advantage of the climate information of high-resolution global

precipitation for their quantitative applications.

24. Are the data archived at another facility or are there plans to do so? Please explain.
This data set will be also archived in NOAA/NWS/NCEP Climate Prediction Center for a while to facilitate the access by users who have been getting the data from the CPC site.

25. Is there an existing agreement or requirement driving this request to archive? Have you already contacted someone at NCEI?
We have already contacted NCDC/CDR program. This work is part of our CDR project.

26. Do you have a data management plan for your data?
No

27. Have funds been allocated to archive the data at NCEI?
We are supported by the NCDC/CDR program.

28. Identify the affiliated research project, its sponsor, and any project/grant ID as applicable.
This product is the result of long-term efforts by the CPC precipitation group supported by several programs, including CPO, HMT, NESDIS and CDR.

29. Is there a desired deadline for NCEI to archive and provide access to the data?
No deadlines for archive or access.

30. Add any other pertinent information for this request.
Thank you very much!